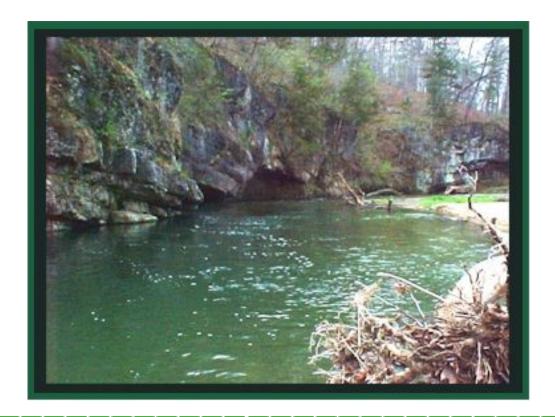
GEOLOGY



Physiographic Region

The Current River Watershed lies within the Salem Plateau Subdivision of the Ozark Plateau Physiographic Region. The Salem Plateau Subdivision is a highly dissected plateau with upland elevations ranging from 1000 to 1400 feet above mean sea level (msl) and local relief (local relief refers to the difference in elevation between two nearby points such as a valley and an adjoining ridge top) ranging from 100 - 200 feet in the uplands to 200 - 500 feet elsewhere (MDNR 1986). Elevations within the Current River Watershed range from a maximum of approximately 1500 feet msl in the uplands to approximately 280 feet in the lower portions of the watershed. Local relief data obtained from the Missouri Department of Conservation (MDC) Fisheries Research Fish Collection Database (1998a) indicates a minimum local relief of 7 feet and a maximum of 555 for Missouri Department of Conservation fish collection sites within the watershed.

Soils

The Current River Watershed occurs primarily within the Ozarks Soil Region. Allgood and Persinger (1979) describe the Ozark Soils Region as

"cherty limestone ridges that break sharply to steep side slopes of narrow valleys. Loess occurs in a thin mantle or is absent. Soils formed in the residuum from cherty limestone or dolomite range from deep to shallow and contain a high percentage of chert in most places. Some of the soils formed in a thin mantle of loess are on the ridges and have fragipans, which restrict root penetration. Soil mostly formed under forest vegetation with native, mid-tall and tall grasses common in open or glade area."

The following is a list of Ozark soil associations found in the Current River Watershed:

Captina-Clarksville-Doniphan: "Nearly level to very steep, moderately well drained to excessively drained loamy upland soils that have fragipans or soils that are cherty throughout." (Allgood and Persinger 1979)

Captina-Macedonia-Clarksville: "Nearly level to very steep, moderately well drained to somewhat excessively drained, loamy upland soils that have fragipans or soils that are cherty throughout." (Allgood and Persinger 1979)

Captina-Macedonia-Doniphan-Poynor: "Nearly level to very steep well drained and moderately well drained, loamy upland soils that have fragipans or soils that are cherty throughout." (Allgood and Persinger 1979)

Hartville-Ashton-Cedar Gap-Nolin: "Deep, nearly level to gently sloping, somewhat poorly drained to excessively drained, loamy bottom land soils." (Allgood and Persinger 1979)

Hobson-Coulstone-Clarksville: "Gently sloping to very steep, moderately well drained to somewhat excessively drained, loamy soils with fragipans or soils that are cherty throughout." (Allgood and Persinger 1979)

Lebanon-Hobson-Clarksville: "Gently sloping to very steep, moderately well drained to somewhat excessively drained, loamy and clayey soils with fragipans or soils that are cherty throughout." (Allgood and Persinger 1979)

Loring-Union-Doniphan: "Nearly level to very steep, well drained and moderately well drained, loamy upland soils that have cherty subsoils or fragipans." (Allgood and Persinger 1979)

Wilderness-Clarksville-Coulstone: "Gently sloping to very steep, moderately well drained to excessively drained, loamy upland soils that have cherty subsoils or fragipans." (Allgood and Persinger 1979)

A small portion of the Current River Watershed in southeastern Ripley and southwestern Butler Counties occurs in the Mississippi Delta Soils Region. Allgood and Persinger (1979) describe the soils of this region:

"These soils are in the broad, nearly level flood plains and low terraces of the Mississippi River and associated tributaries. Crowley's Ridge is the major sloping landform in the region. The upland loess mantle of the ridge is underlain by loamy, sandy, or gravelly deposits. Soils are deep on the flood plains, formed in loamy, sandy, and clayey alluvium. On the ridge soils are deep, loamy, or sandy. Some areas have fragipans. These soils of the lowlands formed under vegetation consisting of wetland, grasses, forest, sedges, and shrubs."

The following is a list of Mississippi Delta soil associations found in the Current River Watershed:

Calhoun-Amagon: "Deep, nearly level to gently sloping, poorly drained loamy soils on slightly concave stream terraces." (Allgood and Persinger 1979)

Bosket-Tuckerman: "Deep, nearly level to moderately sloping, well drained to poorly drained, loamy soils on stream terraces." (Allgood and Persinger 1979)

The geology of the Current River Watershed consists primarily of dolomites and sandstone/dolomites of Ordovician age (Figure Ge01). A significant exposure of Cambrian Dolomite is present in the middle portion of the watershed. This is mainly associated with major stream valleys. Exposures of Precambrian Igneous Rock are also present in the middle portion of the watershed. Both the



Cambrian dolomite and Precambrian igneous rock are geologic exposures associated with the St. Francois Uplift. Within the Current River Watershed, the effects of the uplift are most pronounced in the middle portion of the watershed. As a result, the rocks in this portion of the watershed are older than in other areas of the watershed. Quaternary Alluvium, associated with the Bootheel area of Missouri, exists in the southeastern portion of the watershed on the southeastern side of the Little Black River. In, addition a few small areas of Mississippian limestone and limestone/sandstone occur on the

watersheds eastern boundary.

As is the case in most watersheds of the Ozarks, the geology of the Current River Watershed (primarily consisting of soluble rock formations of dolomites and sandstone dolomites), in combination with an average annual precipitation of over 40 inches has created a karst landscape within the watershed. This karst landscape is characterized, in part, by a close relationship between the surface water and groundwater systems. Within karst landscapes, points or areas of surface water/ground water interaction include losing streams, sinkholes, and springs.

Losing streams are one manner in which surface water is transported or "lost" to the groundwater system. Within the Current River Watershed, 211 miles of streams have been designated as "losing" in the Rules of Department of Natural Resources Division 20-Clean Water Commission Chapter 7-Water Quality (Table Ge01 and Figure Ge02) (MDNR 2000c). This is estimated at 1 mile of losing stream to 12.5 square miles of watershed area (1:12.5). This is a higher concentration of losing streams than has been documented within the Jacks Fork which has a ratio of 1 mile of losing streams to 50 square miles of watershed area. However, this is a relatively lower figure in comparison to the North Fork and Eleven Point Watersheds which have losing stream densities of 1:7.7 and 1:4.2 respectively. Within MDNR 2000c, a losing stream is defined as "A stream which distributes 30% or more of its flow during low flow conditions through natural processes, such as through permeable geologic materials into a bedrock aquifer within two (2) miles flow distance downstream of an existing or proposed discharge". Due to the specific nature of this definition, many streams within the watershed, which possibly lose large amounts of flow to the groundwater system, may have yet to be surveyed or classified as being "losing" in the broader sense of the word. Further study may be needed in order to develop a comprehensive understanding of the role of losing streams within the watershed.

In addition to losing streams, sinkholes provide another point of surface to groundwater interaction. While sinkholes are known to be common in the region surrounding the Current River Watershed, detailed information regarding sinkhole location and/or densities is limited. In order to better understand the extent of occurrence of sinkholes additional research is needed.

Several dye traces have been performed within the Current River Watershed by public and private agencies (Figure Ge02) (MDNR 2000a). Dye traces are useful for determining ground water movement and spring recharge area. Dye trace data for the Current River Watershed indicates that the watershed receives substantial amounts of ground water from neighboring watersheds including the Jacks Fork,

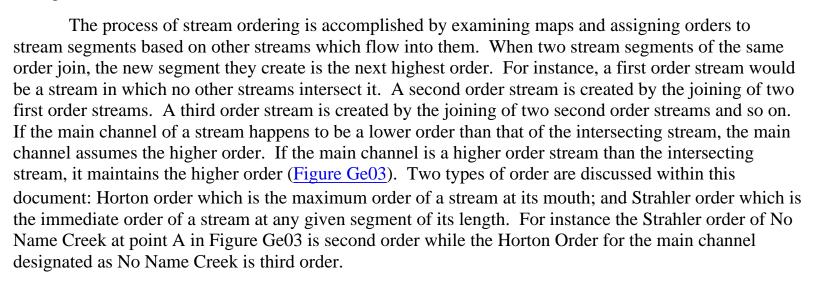
Meremac, Black, and the Eleven Point. The most notable and well defined area of ground water transport is within the Big Spring recharge area. Much of the Big Spring recharge area occurs within the Eleven Point River Watershed where the longest dye trace was found originating in the Middle Fork, a strait line distance of 39 miles. There is little evidence of substantial groundwater transport from the Current River Watershed to neighboring watersheds. The exception to this is a trace completed from a sinkhole within the watershed which was recovered at Alley Spring in the Jacks Fork Watershed.

Springs are the naturally occurring outlets of groundwater systems. Spring flow accounts, to a large extent, for the higher sustained flows of many Ozark streams, including the Current River, relative to streams in other regions of Missouri. Within the watershed there are 248 known springs (1 spring /8.3 square miles of watershed area) (MDNR 2000b) (Figure Ge01). Vineyard and Feder (1974) list

discharges for 49 springs within the watershed (<u>Table Ge02</u>). Twenty six of these springs have discharges exceeding 1 cubic foot per second (cfs). The largest spring within the watershed is <u>Big Spring</u> which has an average flow of approximately 428 cfs. This flow rate makes Big Spring the largest spring within the Ozarks Region of Missouri and Arkansas.

Stream Order, Mileage and Permanency

Stream order is "a hierarchy in which stream segments are arranged" (Judson et al. 1987)



Horton orders for streams within the Current Watershed have been obtained from a 1:24,000 scale Geographic Information System (GIS) hydrography coverage. There are 197 third order and larger streams within the watershed (<u>Table Ge03</u> and Figures <u>Ge04</u>, <u>Ge05</u> and <u>Ge06</u>). These streams account for a total of approximately 1,646 stream miles or 30% of the total stream miles within the watershed. Of the 197 third order and larger streams within the watershed, 157 are third order (857.8 miles), 30 are fourth order (351.3 miles), 8 are fifth order (164.3 miles), and 2 are sixth order (95.5 miles). The Current River is 177.3 miles long and becomes seventh order at the confluence of the Jacks Fork River.

Stream mileage per order (Strahler) for the Current River Watershed has been obtained from a 1:24,000 scale Geographic Information System (GIS) hydrography coverage. Of a total of 5,285 miles of stream within the watershed, approximately 3,255 miles (62%) are first order segments; 920 miles (17%)

are second order; 490 miles (9%) are third order; 326 miles (6%) are fourth order; 128 miles (2%) are fifth order; 31 miles (<1%) are sixth order; and 135 (3%) are seventh order. <u>Table Ge04</u> lists length by order for fourth order and larger streams within the Current River Watershed.

Permanent stream mileage data based on the 1:24,000 National Hydrography Dataset (NHD) for the Current River Watershed indicates that approximately 678 stream miles (13%) within the watershed have permanent water. This equals approximately 1 mile of permanent stream for every 3.9 square miles of drainage area. Lengths of permanent stream by Strahler Order are as follows: first order-28 miles (<1% of all first order miles are permanent); second order-63 miles (7)%; third order-150 miles (31%); fourth order-213 miles (65%); fifth order- 74 miles (58%); sixth order-30 miles (97%); and seventh order-87 miles (100%).

It is important to note that permanent stream mileage data within the 1:24000 NHD is based on USGS Digital Line Graph hydrography data which, in turn is based upon USGS 1:24,000 scale topographic maps (USGS 1998e, USGS 1999b, MoRAP 2002). The USGS assigns a stream permanent status based on that stream having flow twelve months out of the year during normal precipitation (Weirich 1993, Blanc etal. 1999). This method may not take into account periods of drought or the possible 'losing' nature of a stream.

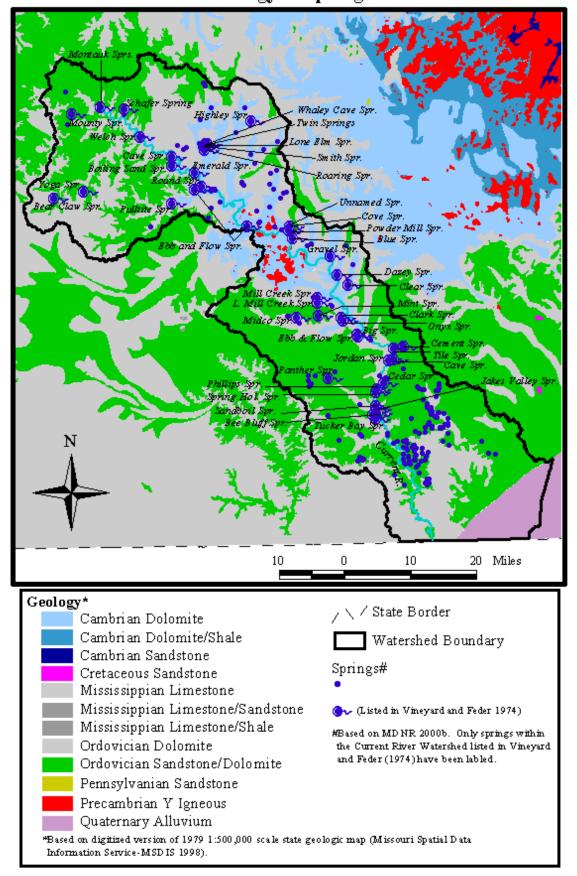
Drainage Area

Total drainage area of the Current River Watershed is River Watershed is 2,621 square miles (1,677,440 acres). The drainage area of the watershed in Missouri (not including the Jacks Fork Drainage) is 2069 square miles (1,324,424 acres). In order to facilitate analysis of watershed characteristics the watershed was divided based on eleven digit hydrologic units. This resulted in 8 units (Figure Ge07). The largest of these units is the Little Black River unit which drains approximately 382.2 square miles (244,582 acres).

Stream Channel Gradient

Channel gradient was determined for all fourth order and larger streams within the Current River Watershed using data digitized from USGS 7.5 minute topographic maps. Composite gradient graphs were constructed for all fifth order and larger streams within the watershed (Figures Ge08, Ge09, Ge10, Ge11, Ge12, Ge13, Ge14, and Ge15). Average gradients for fourth order and larger streams within the watershed range from 1.2 feet per mile to 84.5 feet per mile. The Current River has an average gradient of 3.9 feet/mile.

Figure Ge01. Current River Watershed Geology & Springs



Current River Watershed
Ground Water Transport

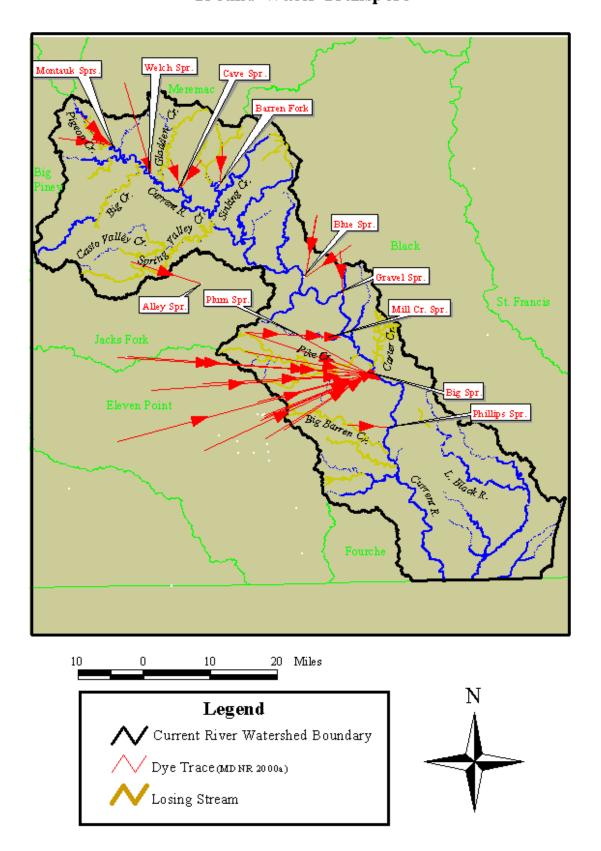
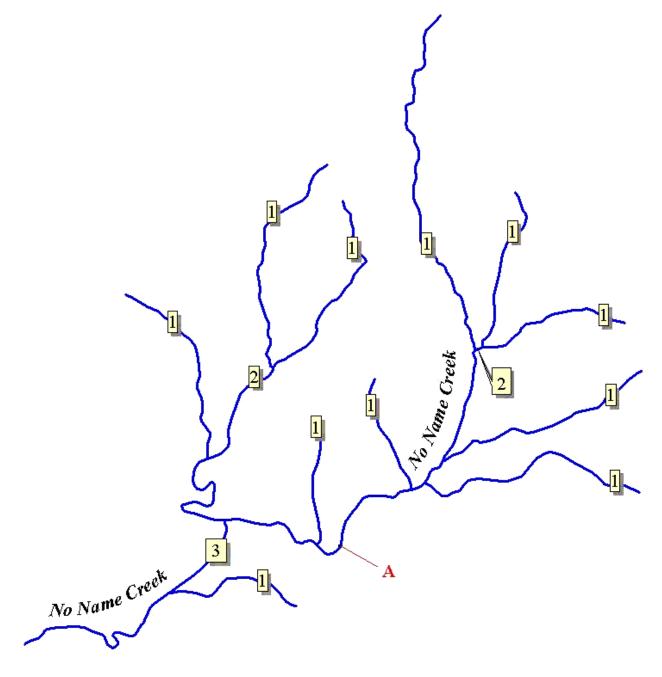


Figure Ge03. Example of Stream Order



The stream segment at Point A has a Horton order of 3 and a Strahler order of 2.

Figure Ge04.

Upper Current River Third Order and Larger Streams

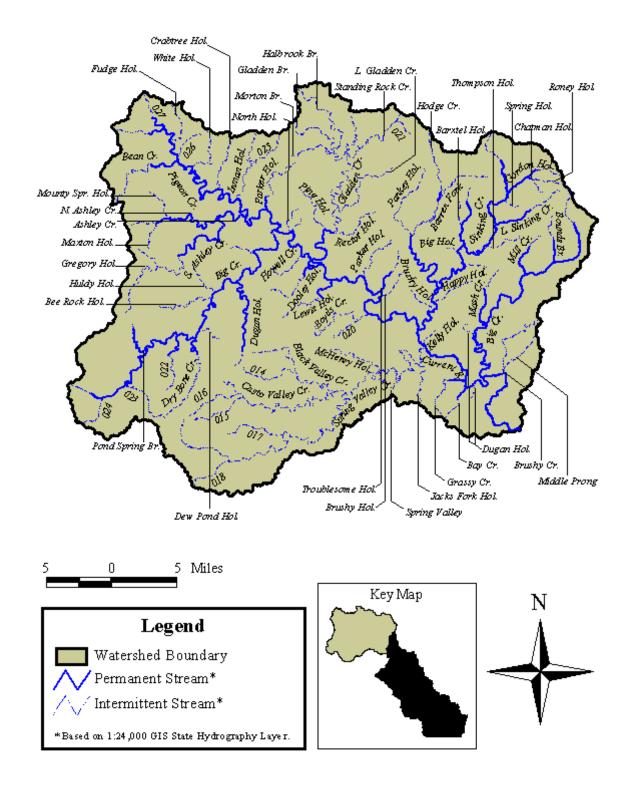


Figure Ge05.

Middle Current River Third Order and Larger Streams

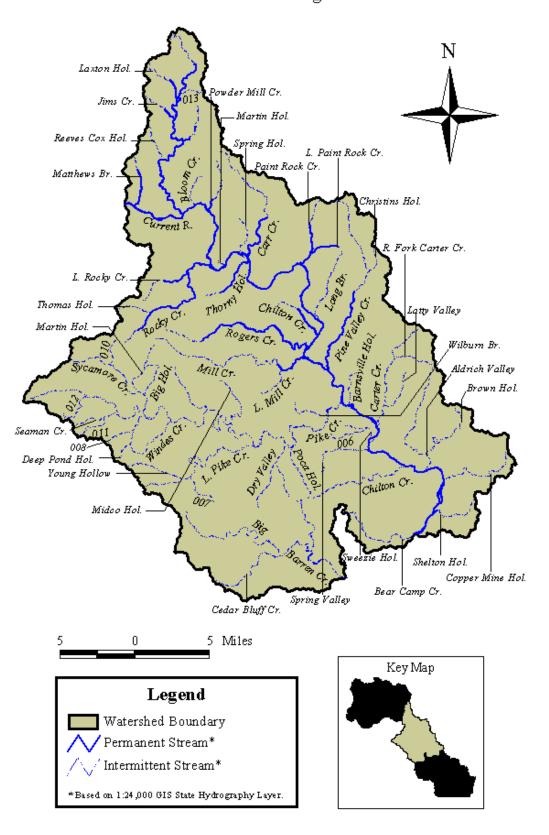
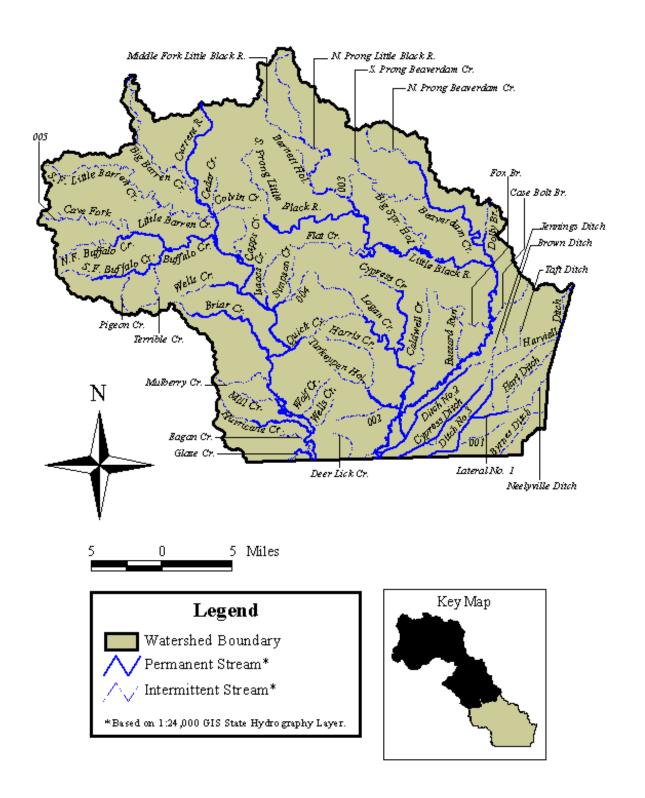
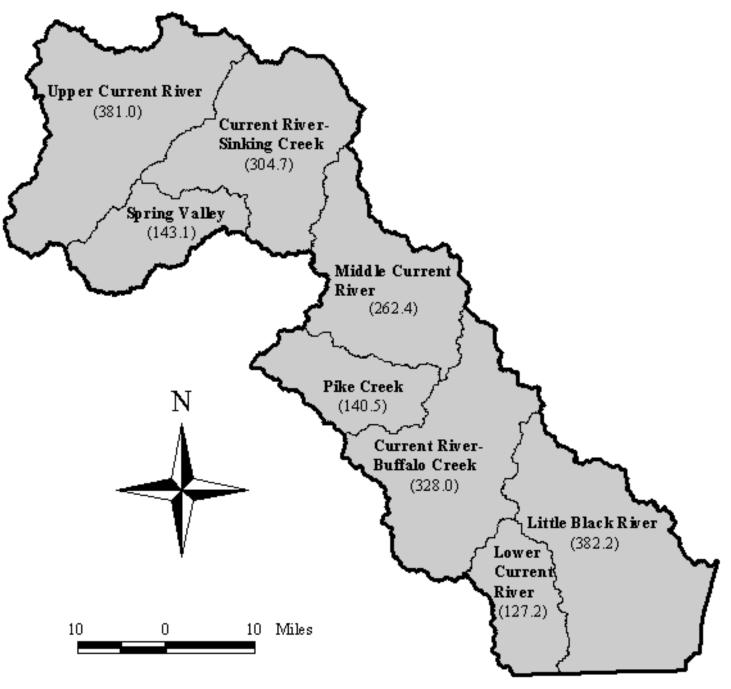


Figure Ge06

Lower Current River Third Order and Larger Streams



Current River Watershed
Eleven Digit Hydrologic Units

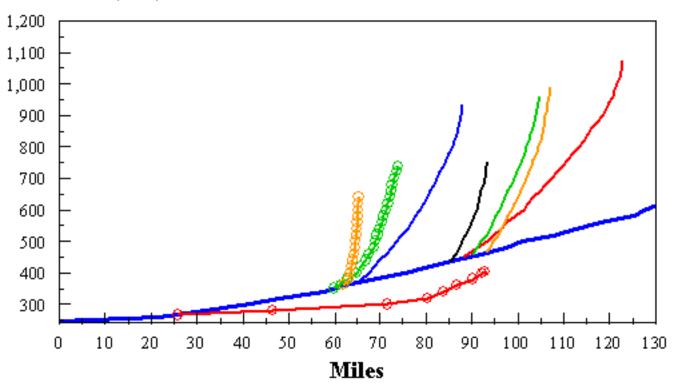


Unit areas given in square miles.

Figure Ge08.

Gradient Plot for Lower Current River & Major Tributaries

Elevation (feet)



Current R. L. Black R. Buffalo Cr. Cedar Cr. Big Barren Cr.

3.9 ft/mi 2.0 ft/mi 27.4 ft/mi 84.5 ft/mi 24.6 ft/mi

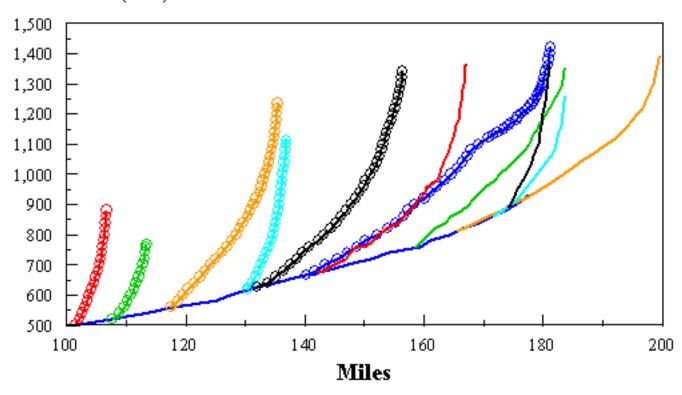
Carter Cr. Pike Cr. Pine Valley Mill Cr.

39.3 ft/mi 18.1 ft/mi 34.9 ft/mi 37.8 ft/mi

Figure Ge09.

Gradient Plot for Upper Current River & Major Tributaries

Elevation (feet)



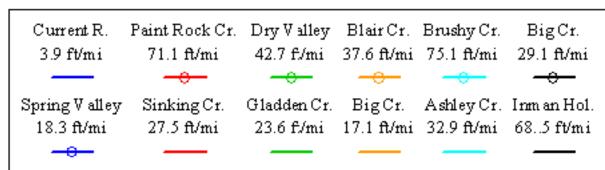
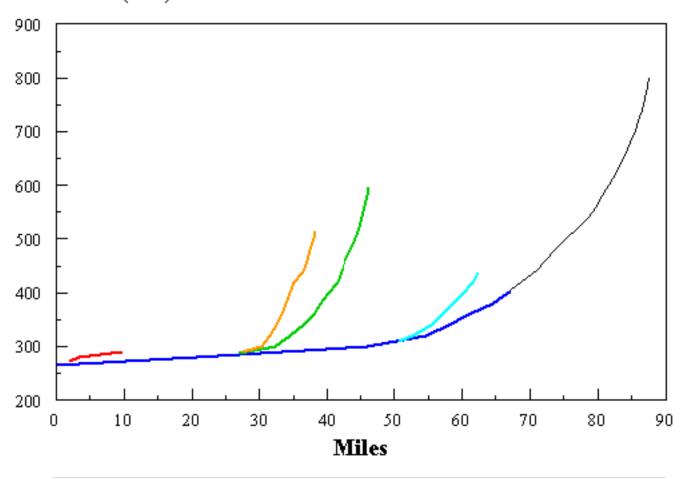


Figure Ge10.

Gradient Plot for Little Black River &

Major Tributaries

Elevation (feet)



L. Black R. Indian Cr. Logan Cr. Harris Cr. Beaver Dam Cr. N.P. Little Black 2.0 ft/mi 2.3 ft/mi 16.0 ft/mi 21.4 ft/mi 10.7 ft/mi 19.4 ft/mi

Figure Gel1.

Gradient Plot for Indian Creek Ditch

& Major Tributaries

Elevation (feet)

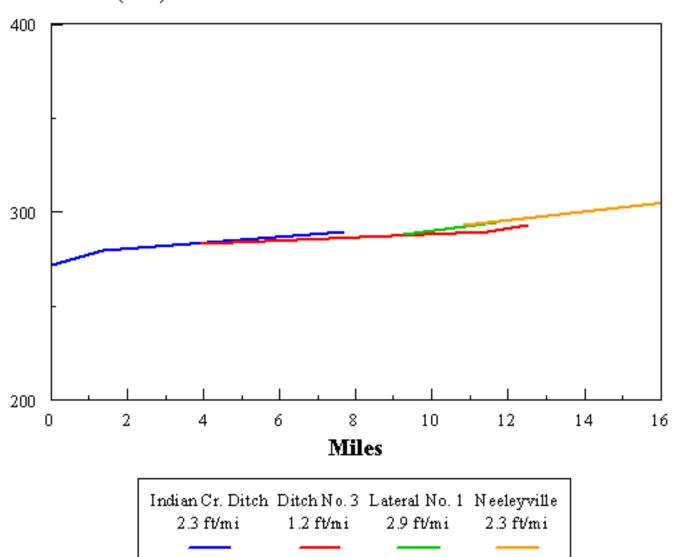
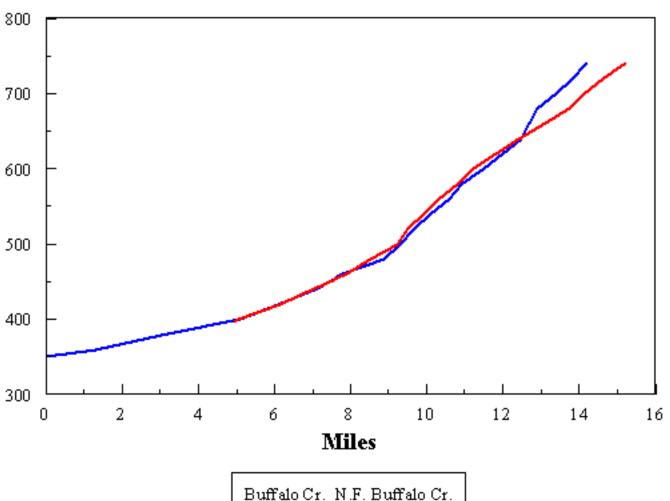


Figure Ge12.

Gradient Plot for Buffalo Creek &

Major Tributary

Elevation (feet)



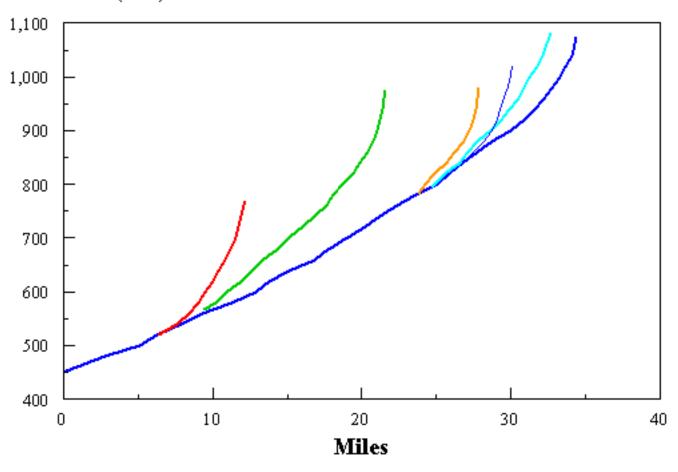
Buffalo Cr. N.F. Buffalo Cr. 27.4 ft/mi 34.3 ft/mi

Figure Ge13.

Gradient Plot for Pike Creek &

Major Tributaries

Elevation (feet)



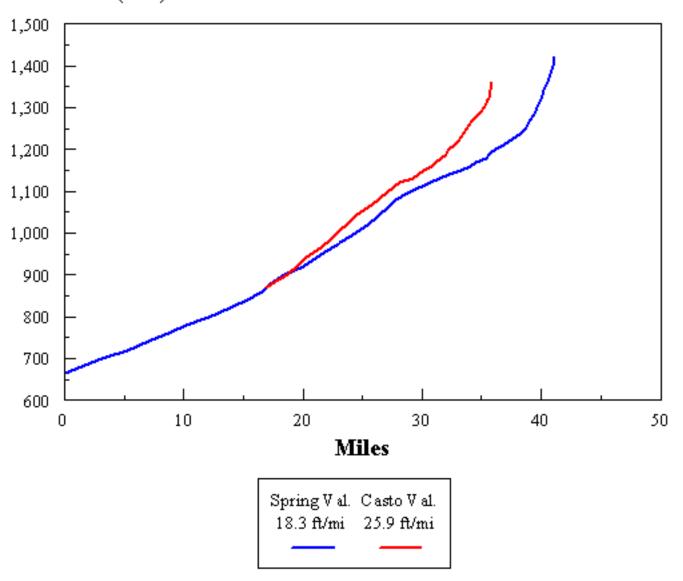
Pike Cr. Dry Valley L. Pike Cr. Deep Pond Hol. Sycamore Cr. Seaman Cr. 18.1 ft/mi 42.7 ft/mi 33.1 ft/mi 49.3 ft/mi 35.5 ft/mi 59.0 ft/mi

Figure Ge14.

Gradient Plot for Spring Valley

& Major Tributary

Elevation (feet)

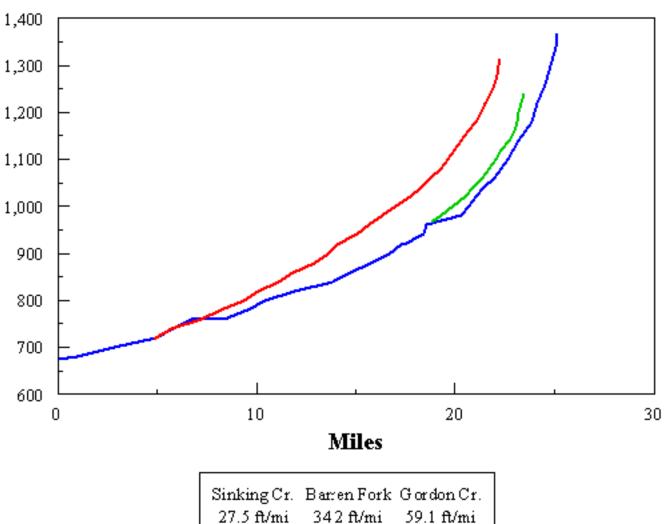


FigureGe15.

Gradient Plot for Sinking Cr.

& **Major Tributaries**

Elevation (feet)



27.5 ft/mi 342 ft/mi 59.1 ft/mi

Table Ge01. Current River Watershed stream reaches designated as losing in Table J Rules of Department of Natural Resources Division 20-Clean Water Commission Chapter 7-Water Quality. Code of State Regulations (MDNR 2000c).

Stream	Miles	From	To
Barren Fork	9.0	sw,se,ne,13,32n,04w	se,se,se,18,31n,04w
Big Cr.	3.5	nw,nw,se,1,32n,02w	sw,nw,nw,06,31n,02w
Big Cr.	2.5	se,se,ne,24,32n,03w	sw,se,se,31,32n,02w
Big Barren Cr.	16.0	ne,nw,sw,06 25n,02w	nw,se,nw,28,25n,01e
Big Barren Cr.	1.5	nw,sw,ne,30,26n,02w	se,sw,se,32,26n,02w
Buchanan Valley	4.0	nw,sw,ne,20,28n,01e	ne,ne,sw,04,27n,01e
Carter Cr.	7.0	ne,03,27n,01e	ne,ne,nw,32,27n,01e
Gladden Cr.	11.0	se,ne,sw,05,32n,05w	se,sw,sw,13,31n,06w
Gordon Hollow	2.0	nw,se,ne,13,32n,03w	ne,se,sw,11,32n,03w
Hodge Cr.	2.5	sw,sw,nw,09,32n,04w	se,nw,nw,28,32n,04w
Little Barren Cr.	12.0	nw,nw,nw,30,25n,01w	se,sw,nw,11,24n,01e
Little Pike Cr.	5.0	sw,nw,nw,18,26n,02w	ne,nw,nw,01,26n,02w
Little Sinking Cr.	2.0	ne,sw,ne,24,32n,03w	sw,nw,ne,26,32n,03w
Middle Fork	3.0	sw,sw,sw,28,26n,02e	ne,nw,se,10,25n,02e
Minning Haw Hol.	1.5	ne,ne,sw,01,32n,04w	nw,se,ne,14,32n,04w
N. Fork Buffalo Cr.	5.0	sw,sw,nw,19,24n,01w	nw,ne,ne,23,24n,01w
Orchard Mill Hol.	2.0	nw,nw,ne,32,33n,04w	sw,sw,nw,09,32n,04w
Pankey Br.	3.0	sw,nw,nw,19,32n,04w	nw,se,sw,06,31n,04w
Pigeon Cr.	9.0	sw,ne,nw,31,33n,07w	se,se,ne,22,32n,07w
Right Fork	2.0	se,ne,se,02,27n,01e	ne,ne,sw,04,27n,01e
Roney Hollow	2.0	se,se,se,13,32n,03w	sw,ne,sw,14,32n,03w
Standing Rock Cr.	5.0	sw,nw,ne,30,33n,04w	ne,ne,sw,05,32n,05w
Stringer Br.	2.0	ne,ne,se,06,32n,04w	sw,nw,nw,19,32n,04w
Unnamed Trib.	1.5	ne,sw,sw,08,29n,06w	se,sw,ne,16,29n,06w
Black Valley Cr.	6.0	sw,nw,nw,27,30n,06w	ne,se,nw,05,29n,05w
Sycamore Cr.	6.0	sw,nw,nw,01,27n,04w	nw,se,se,22,27n,03w
Pike Cr.	24.0	sw,se,sw,16,27n,04w	nw,nw,sw,24,27n,01w
Young Hol.	3.5	sw,se,sw,10,26n,03w	sw,ne,nw,18,26n,02w
Big Cr.	13.0	se,ne,se,17,30,07w	ne,nw,sw,04,31n,06w
Castro Valley	8.0	ne,se,nw,01,29n,07w	nw,se,nw,06,29n,05w
Spring Valley	29.0	sw,sw,se,13,29n,08w	se,se,nw,20,30n,04w
Dry Bone Cr.	1.0	nw,sw,sw,21,30n,07w	se,ne,se,17,30n,07w
S. Ashley Cr.	6.0	ne,se,nw,18,31n,07w	sw,se,ne,34,32n,07w
Total	210.5		

Table Ge02. Location and discharge (cubic feet per second) of selected springs in the Current River Watershed (Vineyard and Feder 1974).

Name	County	USGS 7.5' Quadrant Name	Discharge (cfs)
Barren Creek Spring	Carter	Handy	0.06
Bear Claw Spring	Texas	Raymondville	2.02
Bee Bluff	Ripley	Grandin SW	0.92
Big Spring	Carter	Big Spring	428.00*
Blue Spring	Shannon	Powder Mill Ferry	107.00*
Boiling Sand Spring (1)	Shannon	Round Spring	0.50
Boiling Sand Spring (2)	Shannon	Round Spring	12.57*
Boiling Sand Spring (3)	Shannon	Round Spring	3.68*
Cave Spring (Hunter)	Carter	Big Spring	1.81*
Cave Spring	Shannon	Round Spring	32.38*
Cedar Spring	Carter	Grandin SW	1.10*
Cement Spring	Carter	Hunter	0.68
Clark Spring	Carter	Van Buren South	0.49*
Clear Spring	Carter	Van Buren North	0.32*
Cove Spring	Shannon	Powder Mill Ferry	1.24*
Dazey Spring	Carter	Van Buren North	0.57*
Ebb and Flow Spring	Shannon	Eminence	0.14
Ebb and Flow Spring	Shannon	Round Spring	0.00
Ebb & Flow Spring	Carter	Big Spring	0.41
Emerald Spring	Shannon	Round Spring	0.08*
Gravel Spring	Shannon	Exchange	16.8*
Highley Spring	Dent	Loggers	12.37*
Jakes Valley Spring	Ripley	Grandin SW	0.59*
Jordan Spring	Carter	Big Spring	11.97*
Little Mill Creek	Carter	Van Buren North	0.90*
Lone Elm Spring	Shannon	Round Spring	0.15
Midco Spring	Carter	Fremont	1.48*
Mill Creek Spring	Carter	Van Buren North	10.1
Mint Spring	Carter	Van Buren South	0.01
Montauk Spring 3-7	Dent	Montauk	63.30*
Mounty Spring	Texas	Licking	0.02*
Onyx Spring	Carter	Van Buren South	0.00*
Panther Spring	Carter	Handy	0.44*
Phillips Spring	Carter	Grandin SW	14.80*
Powder Mill Spring	Shannon	Powder Mill Ferry	5.15

Pullite Spring	Shannon	Alley Spring	36.08*
Roaring Spring	Shannon	Round Spring	0.59*
Round Spring	Shannon	Round Spring	40.00*
Sandboil	Ripely	Grandin SW	0.63*
Shaffer Spring	Dent	Cedargrove	2.04*
Smith Spring	Shannon	Round Spring	0.51
Spring Hollow Spring	Carter	Grandin Sw	2.42*
Tile Spring	Carter	Big Spring	0.22*
Tucker Bay Spring	Ripley	Grandin SW	37.75*
Twin Springs	Ripley	Grandin Sw	10.0*
Twin Springs	Shannon	Round Spring	10.96
Unnamed	Shannon	Powder Mill Ferry	0.24
Welch Spring	Shannon	Cedargrove	121.00*
Whaley Cave Spring	Shannon	Gladden	0.31*
Yoga Spring	Texas	Hartshorn	1.96*

^{*}Average of multiple measurements.

Table Ge03 (1 of 8). Third order and larger streams of the Current River Watershed (includes Arkansas).

Ctusom Nome	Order	USGS 7.5' Quad at	Name and Order	Leng	th
Stream Name		Stream Mouth	Receiving Stream	P	T
Current River	7	Pocahontas, AR	Black River (AR)	183.5	183.5
Little Black R.	6	Supply, AR	Current R7	45.6	46.4
Byrnes Ditch	3	Supply, AR	Little Black R6	6.9	18.1
Indian Cr. Ditch	5	Datto, AR	Little Black R6	0.0	0.9
Cypress Ditch	3	Datto, AR	Indian Cr. Ditch-5	8.1	11.6
Ditch No. 3	5	Datto, AR	Indian Cr. Ditch-5	8.0	11.6
CRW001	3	Naylor, AR	Ditch No. 3-5	3.7	3.8
Lateral No. 1	4	Naylor, AR	Ditch No. 3-5	1.6	2.4
Neeleyville Ditch	4	Naylor, AR	Ditch No. 3-5	1.0	5.3
Hart Ditch	3	Naylor, AR	Neeleyville Ditch-4	0.0	5.8
Harviell Ditch	3	Naylor, AR	Ditch No. 3-4	0.0	9.8
Jennings Ditch	3	Naylor, AR	Ditch No. 3-4	0.0	2.8
Brown Ditch	3	Naylor, AR	Jennings Ditch-3	0.0	2.8
Taft Ditch	3	Naylor, AR	Brown Ditch-3	0.0	2.3
Ditch No. 2	3	Datto, AR	Little Black R6	9.3	11.2
Deer Lick Creek	3	Oxly	Little Black R6	0.0	6.2
Logan Cr.	5	Oxly	Little Black R6	13.3	18.9
Harris Cr.	4	Oxly	Logan Cr5	4.7	11.4
CRW002	3	Oxly	Harris Cr4	0.0	3.8
Turkeypen Hol.	3	Oxly	Harris Cr4	0.0	3.3
Caldwell Cr.	3	Oxly	Logan Cr4	0.5	7.0
Cypress Cr.	3	Oxly	Logan Cr4	6.5	9.8
Little Logan Cr.	3	Flatwoods	Logan Cr4	0.0	3.8
Buzzard Run	3	Naylor	Little Black R5	0.0	8.5
Fox Branch	3	Fairdealing	Little Black R5	0.0	2.4
N.P. Beaverdam Cr.	3	Hogan Hollow	Beaverdam Cr4	3.6	8.5
S.P. Beaverdam Cr.	3	Hogan Hollow	Beaverdam Cr4	0.0	9.1
Case Bolt Br.	3	Fairdealing	Little Black R5	0.4	4.7
Beaverdam Cr.	4	Fairdealing	Little Black R5	11.5	11.5
Dolly Br.	3	Fairdealing	Beaverdam Cr4	1.0	3.8
Big Spring Hol.	3	Flatwoods	Little Black R4	1.6	5.9
Flat Cr.	3	Flatwoods	Little Black R4	2.2	9.8
S.P. Little Black R.	3	Flatwoods	Little Black R4	11.0	18.0
N.P. Little Black R.	4	Flatwoods	Little Black R4	5.5	20.5
CRW003	3	Grandin	N.P. Little Black R4	0.0	2.4
Barnett Hol.	3	Grandin	N.P. Little Black R4	0.0	2.6

Middle Fork	3	Grandin	N.P. Little Black R4	0.0	4.9
Glaze Cr.	3	Doniphan S.	Current R7	1.8	7.9
Eagan Cr.	3	Doniphan S.	Current R7	0.0	2.1
Hurricane Cr.	3	Doniphan S.	Current R7	6.0	9.7
Wells Cr.	3	Doniphan S.	Current R7	0.1	2.9
Wolf Cr.	3	Doniphan S.	Current R7	0.0	4.0
Mill Cr.	3	Doniphan S.	Current R7	0.9	4.6
Mulberry Cr.	3	Doniphan S.	Current R7	0.0	5.8
Briar Cr.	3	Doniphan S.	Current R7	9.2	11.0
Simpson Cr.	3	Doniphan N.	Current R7	1.4	5.1
CRW004	3	Doniphan N.	Simpson Cr3	0.0	3.3
Isaacs Cr.	3	Doniphan N.	Current R7	1.2	5.1
Wells Cr.	3	Briar	Current R7	3.1	5.6
Capps Cr.	3	Briar	Current R7	0.1	4.0
Buffalo Cr.	5	Briar	Current R7	5.4	5.4
S.F. Buffalo Cr.	4	Briar	Buffalo Cr5	8.2	10.9
Terrible Cr.	3	Briar	S.F. Buffalo Cr4	0.0	4.7
Pigeon Cr.	3	Bardley	S.F. Buffalo Cr4	0.0	3.4
N.F. Buffalo Cr.	4	Briar	Buffalo Cr.	6.4	12.0
Cave Fork	3	Bardley	N.F. Buffalo Cr4	0.0	14.3
Little Barren Cr.	3	Grandin S.W.	Current R7	0.1	8.5
S.F. Little Barren Cr.	3	Grandin S.W.	Little Barren Cr.	0.2	14.0
Cedar Cr.	4	Grandin S.W.	Current R7	0.0	3.2
Colvin Cr.	3	Grandin S.W.	Cedar Cr.	0.0	3.1
Big Barren Cr.	4	Grandin S.W.	Current R7	1.8	25.0
Cave Fork	3	Handy	Big Barren Cr4	0.0	6.0
CRW005	3	Handy	Cave Fork-3	0.0	1.9
Devils Run	3	Handy	Big Barren Cr3	0.0	5.0
Cedar Bluff Cr.	3	Handy	Big Barren Cr4	0.0	2.7
Bear Camp Cr.	3	Grandin S.W.	Current R7	0.0	7.2
Shelton Hol.	3	Big Spring	Current R7	0.3	3.8
Copper Mine Hol.	3	Big Spring	Current R7	0.1	6.6
Aldrich Valley	3	Big Spring	Current R7	0.0	9.2
Brown Hol.	3	Big Spring	Aldrich Valley-7	0.0	6.4
Chilton Cr.	3	Big Spring	Current R7	0.1	8.5
Spring Valley	3	Big Spring	Current R7	0.6	45.1
Sweezie Hol.	3	Big Spring	Current R7	0.0	2.5
CRW006	3	Big Spring	Sweezie Hol.	0.0	3.0
Carter Cr.	4	Big Spring	Current R7	0.1	9.2
Latty Valley	3	Big Spring	Carter Cr4	0.0	3.2
R. Fork Carter Cr.	3	Garwood	Carter Cr4	0.0	3.0
Barnsville Hol.	3	Garwood	Current R7	0.5	3.2

Pike Cr.	5	Van Buren S.	Current R7	1.0	38.7
Wilburn Br.	3	Van Buren S.	Pike Cr5	0.0	3.5
Dry Valley	4	Van Buren S.	Pike Cr5	0.0	5.6
Pocca Hol.	3	Van Buren S.	Dry Valley-4	0.0	4.1
Secesh Hol.	3	Van Buren S.	Dry Valley-4	0.0	2.6
Little Pike Cr.	4	Fremont	Pike Cr5	0.0	11.5
CRW007	3	Fremont	Little Pike Cr4	0.0	2.8
Young Hol.	3	Fremont	Little Pike Cr4	0.0	4.0
Midco Hol.	3	Fremont	Pike Cr5	0.0	4.4
Vermillion Hol.	3	Fremont	Pike Cr5	0.0	3.9
Windes Cr.	3	Fremont	Pike Cr5	0.0	3.3
Deep Pond Hol.	4	Low Wassie	Pike Cr5	0.0	4.8
CRW008	3	Low Wassie	Deep Pond Hol4	0.0	2.2
CRW009	3	Low Wassie	Deep Pond Hol3	0.0	1.0
Sycamore Cr.	4	Low Wassie	Pike Cr5	0.0	8.5
Big Hol.	3	Winona	Sycamore Cr4	0.0	8.5
Martin Hol.	3	Winona	Sycamore Cr4	0.0	3.2
CRW010	3	Winona	Sycamore Cr4	0.0	1.9
Seaman Cr.	4	Low Wassie	Pike Cr5	0.0	3.3
CRW011	3	Low Wassie	Seaman Cr4	0.0	2.6
CRW012	3	Winona	Pike Cr4	0.0	3.1
Pine Valley Cr.	4	Van Buren N.	Current R7	6.9	14.9
Christins Hol.	3	Van Buren N.	Pine Valley Cr4	0.0	1.8
Mill Cr.	4	Van Buren N.	Current R7	3.2	14.3
Little Mill Cr.	3	Van Buren N.	Mill Cr4	0.0	2.6
Rogers Cr.	3	Van Buren N.	Current R7	10.6	13.3
Chilton Cr.	3	Van Buren N.	Current R7	2.5	4.1
Long Br.	3	Van Buren N.	Current R7	0.0	5.8
Paint Rock Cr.	4	Exchange	Current R7	3.5	5.3
Little Paint Rock Cr.	3	Exchange	Paint Rock Cr4	2.1	2.1
Thorny Creek	3	Powdermill Ferry	Current R7	3.3	4.4
Carr Cr.	3	Powdermill Ferry	Current R7	4.2	10.4
Powdermill Cr.	3	Powdermill Ferry	Current R7	1.2	4.3
Bloom Cr.	3	Powdermill Ferry	Current R7	0.0	2.6
Blair Cr.	4	Powdermill Ferry	Current R7	16.5	19.5
Reeves Cox Hol.	3	Powdermill Ferry	Blair Cr4	0.0	2.6
Spring Hol.	3	Midridge	Blair Cr4	1.0	7.5
Jim's Cr.	3	Midridge	Blair Cr4	1.1	2.9
Laxton Hol.	3	Midridge	Blair Cr4	1.8	4.0
CRW013	3	Midridge	Blair Cr4	0.0	1.7
Matthew's Br.	3	Eminence	Current R7	2.7	3.8
Brushy Cr.	4	The Sinks	Current R7	0.0	6.9

3	The Sinks	Brushy Cr4	0.0	3.8
4	Eminence	Current R7	24.8	28.1
3	The Sinks	Big Cr4	3.1	5.0
3	The Sinks	Big Cr4	2.8	4.0
3	Midridge	Big Cr4	1.8	4.2
3	Eminence	Current R7	1.2	3.1
3	Eminence	Current R7	1.5	5.2
5	Round Spring	Current R6	0.6	45.1
3	Alley Spring	Spring Valley Cr5	0.0	3.9
3	Round Spring	Spring Valley Cr5	0.0	5.7
5	Summersville NE	Spring Valley Cr5	0.0	16.5
4	Summersville NE	Casto Valley Cr5	0.0	8.2
3	Lewis Hollow	Black Valley Cr4	0.0	5.2
3	Lewis Hollow	Black Valley Cr4	0.0	2.3
3	Summersville	Casto Valley Cr4	0.0	4.8
3	Summersville	Casto Valley Cr4	0.0	5.0
3	Summersville NE	Spring Valley Cr4	0.0	5.2
3	Summersville	Spring Valley Cr4	0.0	3.9
5	Round Spring	Current R6	24.4	27.2
3	Round Spring	Sinking Cr5	0.0	3.6
4	Round Spring	Sinking Cr5	8.9	20.5
3	Gladden	Barren Fork-4	0.0	7.1
3	Gladden	Barren Fork-4	0.8	5.9
3	The Sinks	Sinking Cr4	0.0	1.9
3	Loggers Lake	Sinking Cr4	4.2	5.3
3	Loggers Lake	Little Cr3	0.0	2.2
3	Loggers Lake	Sinking Cr4	0.0	3.5
3	Loggers Lake	Sinking Cr4	3.3	6.2
4	Loggers Lake	Sinking Cr4	3.0	5.2
3	Loggers Lake	Gordon Cr4	0.4	1.8
3	Loggers Lake	Chatman Hol3	0.0	2.6
3	Round Spring	Current R5	0.1	7.6
3	Round Spring	Boyds Cr3	0.0	2.5
3	Round Spring	Current R5	0.0	3.0
3	Round Spring	Current R5	2.0	3.8
3	Round Spring	Current R5	0.0	4.8
3	Lewis Hollow	Current R5	2.2	6.9
4	Cedar Grove	Current R5	6.2	22.6
3	Cedar Grove	Gladden Cr4	0.0	4.7
3	Cedar Grove	Gladden Cr4	0.0	4.4
3	Cedar Grove	Gladden Cr4	0.0	7.7
3	Cedar Grove	Gladden Cr4	0.0	8.0
	3 3 3 3 5 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	4 Eminence 3 The Sinks 3 The Sinks 3 Midridge 3 Eminence 3 Eminence 5 Round Spring 3 Alley Spring 3 Round Spring 5 Summersville NE 4 Summersville NE 3 Lewis Hollow 3 Lewis Hollow 3 Summersville 3 Summersville 5 Round Spring 6 Summersville 7 Summersville 8 Summersville 9 Summe	4 Eminence Current R7 3 The Sinks Big Cr4 3 The Sinks Big Cr4 3 Eminence Current R7 3 Eminence Current R7 5 Round Spring Current R6 3 Alley Spring Spring Valley Cr5 5 Summersville NE Spring Valley Cr5 5 Summersville NE Spring Valley Cr5 4 Summersville NE Casto Valley Cr5 3 Lewis Hollow Black Valley Cr4 3 Summersville Casto Valley Cr4 3 Summersville NE Spring Valley Cr4 3 Summersville Casto Valley Cr4 5 Round Spring Current R6 3 Summersville Casto Valley Cr4 3 Summersville Spring Valley Cr4 5 Round Spring Current R6 6 Round Spring Sinking Cr5 6 Round Spring Sinking Cr5 7 Round Spring Sinking Cr5 8 Round Spring Sinking Cr5 9 Sinking Cr.	4 Eminence Current R7 24.8 3 The Sinks Big Cr4 3.1 3 The Sinks Big Cr4 2.8 3 Midridge Big Cr4 1.8 3 Eminence Current R7 1.2 3 Eminence Current R7 1.5 5 Round Spring Current R6 0.6 3 Alley Spring Spring Valley Cr5 0.0 3 Round Spring Spring Valley Cr5 0.0 4 Summersville NE Spring Valley Cr5 0.0 4 Summersville NE Spring Valley Cr5 0.0 3 Lewis Hollow Black Valley Cr5 0.0 3 Lewis Hollow Black Valley Cr4 0.0 3 Summersville Casto Valley Cr4 0.0 3 Summersville Spring Valley Cr4 0.0 3 Summersville Spring Valley Cr4 0.0 3 Summersville Spring Valley Cr4 0.0

Gladden Br. 4 Cedar Grove Gladden Cr4 Halbrook Br. 3 Cedar Grove Gladden Br4 Morton Br. 3 Cedar Grove Gladden Br4 Dooley Hol. 3 Lewis Hollow Current R5 Howell Hol. 3 Cedar Grove Current R5 North Hol . 3 Cedar Grove Current R5 Big Cr. 4 Cedar Grove Current R5 Krewson Hol. 3 Montauk Big Cr4 Dugan Hol. 3 Hartshorn Big Cr4 Huldy Hol. 3 Hartshorn Big Cr4	0.0 0.0 1.6 0.0 0.0 30.2 0.0 8.3 0.0	8.9 9.3 4.2 5.5 3.3 2.5 32.2 2.0 12.6
Morton Br.3Cedar GroveGladden Br4Dooley Hol.3Lewis HollowCurrent R5Howell Hol.3Cedar GroveCurrent R5North Hol.3Cedar GroveCurrent R5Big Cr.4Cedar GroveCurrent R5Krewson Hol.3MontaukBig Cr4Dugan Hol.3HartshornBig Cr4Huldy Hol.3HartshornBig Cr4	0.0 1.6 0.0 0.0 30.2 0.0 8.3	4.2 5.5 3.3 2.5 32.2 2.0
Dooley Hol.3Lewis HollowCurrent R5Howell Hol.3Cedar GroveCurrent R5North Hol.3Cedar GroveCurrent R5Big Cr.4Cedar GroveCurrent R5Krewson Hol.3MontaukBig Cr4Dugan Hol.3HartshornBig Cr4Huldy Hol.3HartshornBig Cr4	1.6 0.0 0.0 30.2 0.0 8.3	5.5 3.3 2.5 32.2 2.0
Howell Hol. 3 Cedar Grove Current R5 North Hol. 3 Cedar Grove Current R5 Big Cr. 4 Cedar Grove Current R5 Krewson Hol. 3 Montauk Big Cr4 Dugan Hol. 3 Hartshorn Big Cr4 Huldy Hol. 3 Hartshorn Big Cr4	0.0 0.0 30.2 0.0 8.3	3.3 2.5 32.2 2.0
North Hol . 3 Cedar Grove Current R5 Big Cr. 4 Cedar Grove Current R5 Krewson Hol. 3 Montauk Big Cr4 Dugan Hol. 3 Hartshorn Big Cr4 Huldy Hol. 3 Hartshorn Big Cr4	0.0 30.2 0.0 8.3	2.5 32.2 2.0
Big Cr.4Cedar GroveCurrent R5Krewson Hol.3MontaukBig Cr4Dugan Hol.3HartshornBig Cr4Huldy Hol.3HartshornBig Cr4	30.2 0.0 8.3	32.2
Krewson Hol. 3 Montauk Big Cr4 Dugan Hol. 3 Hartshorn Big Cr4 Huldy Hol. 3 Hartshorn Big Cr4	0.0 8.3	2.0
Dugan Hol.3HartshornBig Cr4Huldy Hol.3HartshornBig Cr4	8.3	
Huldy Hol. 3 Hartshorn Big Cr4		126
	0.0	14.0
		3.0
Bee Rock Hol. 3 Hartshorn Big Cr4	0.0	5.4
Dew Pond Hol. 3 Hartshorn Big Cr4	0.0	2.4
Dry Bone Cr. 3 Hartshorn Big Cr4	2.6	9.3
CRW022 3 Hartshorn Big Cr4	2.6	6.2
Pond Spring Hol. 3 Raymondville Big Cr4	3.1	3.5
CRW023 Big Cr4	0.5	5.3
CRW024 3 Eunice Big Cr4	0.0	2.8
Parker Hol. 3 Cedar Grove Current R5	1.2	6.5
Ashley Cr. 4 Montauk Current R5	3.0	3.0
South Ashley Cr. 3 Montauk Ashley Cr5	8.0	14.9
Gregory Hol. 3 Licking South Ashley Cr.3	0.0	6.3
North Ashley Cr. 4 Montauk Ashley Cr4	7.8	10.1
Mounty Spring Hol. 3 Licking North Ashley Cr4	0.0	2.9
Maxton Hol. 3 Licking North Ashley Cr4	0.1	2.2
Inman Hol. 4 Montauk Current R5	0.0	6.5
CRW025 3 Montauk Inman Hol4	0.0	3.8
Crabtree Hol. 3 Montauk Current R3	0.0	5.0
White Hol. 3 Montauk Current R4	0.0	4.8
Bean Cr. 3 Montauk Current R4	2.8	8.4
Pigeon Cr. 3 Maples Current R4	14.9	21.1
CRW026 3 Montauk Pigeon Cr4	0.0	2.6
Fudge Hol. 3 Maples Pigeon Cr4	0.0	3.8
CRW027 3 Maples Pigeon Cr4	1.8	3.8

P-Permanent Stream Miles (Determined from 1:24,000 scale GIS hydrography coverage)

T-Total Stream Miles (Determined from 1:24,000 scale GIS hydrography coverage)

Abbreviations: Br.-Branch, Cr.-Creek, Hol.-Hollow, R-River

Table Ge04. Stream length per order (Strahler) and total length of fourth order (Horton) and larger streams in the Current River Watershed. Number in parenthesis represents combined stream miles in Missouri and Arkansas. Only the main stem of streams is included.

Stream Name	Length by Strahler Order (miles)						Total	
								Length
	7	6	5	4	3	2	1	
Current R.	87.1	197.	32.0	3.2		Pigeon Cı	:.	142.0
	(128.6)						(183.5)	
Little Black R.		6.9	23.4	16.2		N.P. Littl	e Black R.	46.5 (58.2)
		(18.6)						
Indian Cr. Ditch			(0.9)		_	Ditch/Ditch	(0.9)	
Ditch No. 3			4.9	3.3		CRW001		8.2 (11.7)
			(8.4)					
Lateral No. 1				1.6		Neeleyville D		1.6
Neeleyville Ditch				1.0		1.6		
Logan Cr.				13.3	2.5			
Harris Cr.				4.1	5.2			
Beaverdam Cr.				11.5	Nor	th & South	O ,	11.5
					Beaverdam Cr.			
N.P. Little Black				12.6	5.0	1.9	1.0	20.5
R.								
Buffalo Cr.			5.4		No	rth & South	,	5.4
				4.0	4.0	Buffalo C		10.0
S.F. Buffalo Cr.				4.9	4.3			
N.F. Buffalo Cr.				3.8	2.9	4.5		
Cedar Cr.				0.1	1.6			
Big Barren Cr.				14.3	8.5	0.4		
Carter Cr.				6.4	1.3	0.8		
Pike Cr.			31.3	2.8	2.7			
Dry Valley				2.1	2.3	0.5	0.7	
Little Pike Cr.				8.8	0.3	2.1	0.3	11.5
Deep Pond Hol.				2.4	0.9	1.2	0.3	4.8
Sycamore Cr.				5.3	1.9	0.8	0.6	8.6
Seaman Cr.				1.1	0.9	0.4	0.9	3.3
Pine Valley Cr.				8.7	1.9	3.2	1.0	14.8
Mill Cr.				2.6	9.3	1.4	1.0	14.3
Paint Rock Cr.				1.1	2.4	0.6	1.1	5.2
Blair Cr.				13.4	4.6	0.6	0.8	19.4
Brushy Cr.				0.3	2.6	3.2	0.7	6.8

Big Cr.		19.7	6.6	0.4	1.3	28.0
Spring Valley Cr.	20.2	17.8	6.0	0.4	0.8	45.2
Casto Valley Cr.	2.1	12.4	1.3	0.0	0.6	16.4
Black Valley Cr.		5.2	2.9	CRW014/S	S.FBlack	8.1
				Vall	ey	
Sinking Cr.	5.0	16.5	2.9	1.5	1.4	27.3
Barren Fork		15.6	3.7	0.4	0.8	20.5
Gordon Cr.		2.1	0.7	1.6	0.9	5.3
Gladden Cr.		17.7	3.9	0.1	1.0	22.7
Gladden Br.		2.4	4.2	1.4	1.0	9.0
Big Cr.		29.5	1.2	1.0	0.6	32.3
Ashley Cr.		3.0		N. Ashley (Cr.	3.0
North Ashley Cr.		6.6	1.2		- 1	7.8
				Maxtor	n Hol.	
Inman Hol.		3.5	1.9	0.5	0.7	6.6